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EIGHT NEW TAXA OF DROSERA FROM AUSTRALIA

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ABSTRACT

Six new species and two new subspecies of *Drosera* (Droseraceae) are described. Drosera citrina, D. lasiantha, D. nivea, D. silvicola, and D. stelliflora are pygmy droseras from southwestern Australia; D. bicolor and D. macrophylla subsp. monantha are tuberous droseras from southwestern Australia. Drosera whittakeri subsp. aberrans is a tuberous species from South Australia and Victoria. Features that distinguish these taxa from nearest relatives are presented, along with other data.

KEY WORDS: Australia, *Drosera*, Droseraceae, South Australia, Victoria, Western Australia

INTRODUCTION

Since the publication of the first two volumes of Carnivorous Plants of Australia (Lowrie 1987, 1989), many new Drosera taxa have been discovered. Most of these have been reported by Lowrie & Carlquist (1990), Lowrie & Marchant (1992), and Marchant & Lowrie (1992). In the present paper, an additional eight taxa are described.

The southwest of Western Australia is remarkable for the large number of droseras found there. With the current additions, 104 Drosera taxa are known from this area; of these, 73 are recognized at the species level. The reasons for this high level of speciation in the region may relate primarily to edaphic factors, and the insular way in which soil types suitable for Drosera are distributed. Some of the species are known to be restricted to special soil conditions. For example, D. parvula Planchon is found only in deep white sand,

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whereas D. citrina Lowrie & Carlquist is known only from yellow sand. Drosera barbigera Planchon grows in a mix of laterite and silica sand on hilltops; when this species grows on flat ground, investigation generally shows that the area is a remnant of an eroded hilltop, a barely perceptible rise.

Drosera localities for the world at large can be characterized as acidic. The silica sands in which Drosera occurs in Australia are likely acidic to various degrees, and the soil texture and topography (valley vs. hill) may dictate different degrees of water availability that also govern the range of Drosera taxa. Rainfall in southwestern Australia decreases markedly from the southwestern tip of the continent toward the interior, the north, and the east.

Western Australia's first resident botanist, James Drummond (1784-1863), explored and collected extensively for most of his life in the southwest of Western Australia. He observed that plants in this region seemed restricted to limited areas, as he stated in an 1844 letter to W.J. Hooker in Kew: "When we consider the great numbers of species known to grow in only one spot, and these spots exhibiting no very remarkable conditions of land or aspect, etc., it is impossible to calculate the amount of novelty which might reward the researches of a naturalist." The genetic and cytological patterns underlying the species of *Drosera* need elucidation.

NEW SPECIES AND SUBSPECIES

The new species are presented first. For convenience of comparisons, the first five species presented are pygmy droseras, followed by the new tuberous species. New tuberous subspecies conclude the paper.

Drosera citrina A. Lowrie & S. Carlquist, spec. nov. HOLOTYPE: AUS-TRALIA. In deep yellow sand between low shrubs on Brand Highway, 24 km S of Regan's Ford, Western Australia, 9 October 1983, Allen Lowrie 83/011 (PERTH); Isotype: RSA.

Herba perennis 1.5 cm in diametro, folia rosulata. Caulis 1 cm longi, stipularum foliolorum dense vestitus. Lamina late elliptica, 1.5 cm longa, 1.2 mm lata, cupulata. Petiola anguste lanceolata, 5 mm longa, ad basi 1 mm lata, ad apice 0.3 mm. Gemma stipularum ovoidea-globosa, 4.5 mm longa, 5.5 mm in diametro, mucronasta. Stipula trilobata, 4.5 mm longa, 3 mm lata, lobus centralis in 3 segmenti divisus, segmenti setosi; lobi laterales serratomarginati, apex bisetosum. Inflorescentia racemosa. Scapi 1-2, 4 cm longi, minute glandulosi, ad apicem dense glandulosi. Flores ca. 12 per scapi. Pedicelli 2.5-3.0 mm-longi, glandulosi, in fructibus semi-erecti, ebracteolati vel ad apicem inflorescentiae bracteolati, bracteolae 2.5 mm longae. Sepala ovata, 2 mm longa, 1.2 mm lata, sparse glandulosa, margine integra sed ad apicem serrata. Petala lutea, e basi alba, obovata, 5 mm longa, 3.5 mm lata. Ovarium turbinatum, 0.6 mm longa, 1 mm in diametro. Styli 3(-4), alba, filiformes, patentia, 3.0-4.5 mm longi, e basi 0.15 mm in diametro, acuminati. Fructus ignotus.

Fibrous rooted perennial herb, forming a compact rosette 1.5 cm in diameter. Stem to 1 cm long, covered with the remains of the previous season's leaves and stipules. Lamina broadly elliptic, 1.5 mm long, 1.2 mm wide, deeply cupped. Petiole narrowly lanceolate in outline, 5 mm long, 1 mm wide near the base, tapering to 0.3 mm wide at the apex. Stipular bud broadly ovoid, globelike with a small pointed projection at the apex, 4.5 mm long, 5.5 mm in diameter. Stipules trilobed, 4.5 mm long, 3 mm wide, the central lobe divided into three segments, each segment narrowing to setae; upper outer margins of lateral lobes serrate, apex with two short setae, one seta equaling in length the central lobe present on the inner margin. Inflorescence a raceme. Scapes one or two, to 4 cm long, covered with minute glandular hairs, densely glandular near apex. Flowers 12 or more per inflorescence. Pedicels 2.5-3.0 mm long. glandular, semierect in fruit, bracteoles mostly absent; when present, at the apex of the inflorescence and 2.5 mm long. Sepals ovate, 2 mm long, 1.2 mm wide, surface sparsely covered with glandular hairs, margins entire except for the serrate apex. Petals lemon yellow, white at base, obovate, 5 mm long, 3.5 mm wide. Ovary at anthesis turbinate, 0.6 mm long, 1 mm in diameter. Styles three, sometimes four, style (including stigma) white, filiform, spreading horizontally, 3.0-4.5 mm long. 0.15 mm in diameter at the base but tapering toward the apex. Fruit and seeds unknown.

Drosera citrina (Fig. 1) belongs to subgenus Rorella (DC.) Diels section Lamprolepis Planchon. Drosera nivea Lowrie & Carlquist is considered to be the closest relative (see discussion below under that species). Drosera citrina may be mistaken for fruiting or nonflowering specimens of D. pycnoblasta Diels, a species with a smooth globelike stipular bud. Drosera pycnoblasta differs from D. citrina by having no pointed projection at the apex of its stipular bud and by having trilobed stipules with entire margins.

Drosera citrina is illustrated in the first printing of Carnivorous Plants of Australia, Vol. 2 (Lowrie 1989, pp. 154-157) as D. rechingeri Strid; this will be corrected in subsequent printings. For "Drosera coolamon," a nomen nudum in Lowrie (1989, pp. 38-41), the earlier name D. rechingeri should have been used.

Drosera lasiantha A. Lowrie & S. Carlquist, spec. nov. HOLOTYPE: AUS-TRALIA. In loamy laterite soils on open areas with dwarf jarrah (Eucalyptus marginata) woodland on the higher scree slopes, top of crest, west end of the Porongorup Range, Porongorups, Western Australia, 25 November 1991, Allen Lowrie 523 (PERTH); Isotype: RSA.



Figure 1. Drosera citrina. A. Habit of plant in flower. B. Sepal. C. Petal. D. Ovary with styles. E. Stigmatic portion of style, enlarged. F. Leaf. G. Section of petiole. H. Stipule. Scales = 1 mm.

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Herba perennis, folia rosulata, infima deflexa. Caulis ad 4 cm longi, stipularum petiolorumque rudimentis dense vestitus. Lamina elliptica, 3 mm longa, 2 mm lata, petioli 7.5 mm longi, e basi 1 mm lati. Gemma 4 mm longa, 2.5 mm lata. Stipulae scariosae, trilobatae, subdivisi, ad apicem trisetosae, margine serrata. Inflorescentia racemiformis, 2 cm longa. Scapi 1-4, dense glandulosi et lanati. Flores ca. 12. Pedicelli 1.3 mm longi, semi-patenti, ebracteolati. Sepala elliptico-ovata, 4 mm longa, 1.3-2.0 mm lata, margine serrata, albolanata. Petala atrorosea, obovata, 6.5 mm longa, 5.5 mm lata. Ovarium turbinatum, 0.8 mm longum, 1 mm in diametro ad anthesim. Styli 3, albi, semi-erecti, 0.7 mm longi. Stigma rosea, clavata, e basi falcata, 1 mm longa. Capsula ignota.

Rosette perennial forming a compact convex rosette 1.5 cm in diameter, leaves reflexed. Stem 4 cm long, covered with the withered remains of the previous season's growth and supported below on prop roots. Active insect trapping leaves about 10 in number. Lamina elliptic, 3 mm long, 2 mm wide. Petiole 7.5 mm long, 1 mm wide at the base, narrowed to 0.5 mm at the apex. Stipule bud ovoid, 4 mm long, 2.5 mm wide, setose. Stipules three lobed, 7 mm long, 4 mm wide, the central lobe divided into three segments, each segment in turn divided into more segments narrowing to setae, lateral lobes serrate on the outer margin with the apex divided into three short setae; on the outer margin two setae are present. Inflorescence a raceme to 2 cm tall. Scapes 1-4, densely covered with short glandular hairs and white nonglandular woolly hairs. Flowers about 12 in number. Pedicels 1.3 mm long, semierect in fruit, bracteoles absent. Sepals narrowly ovate, 4 mm long, 1.3-2.0 mm wide, margins irregularly serrate, surface covered with white, nonglandular long woolly hairs. Petals dark pink, obovate, 6.5 mm long, 5.5 mm wide. Ovary turbinate, 0.8 mm long, 1 mm in diameter at anthesis. Styles three, white, semierect, 0.7 mm long. Stigmas pale to dark pink, clavate, falcate near the base, 1 mm long.

Drosera lasiantha (Fig. 2) belongs in subgenus Rorella section Lamprolepis. Drosera scorpioides Planchon and D. dichrosepala Turcz. are considered the closest relatives of D. lasiantha, but differ from it in the features cited below. It is locally abundant, and the population extends into Porongorups National Park, where it is safe from agriculture.

Scapes glandular, petals elliptic. D. dichrosepala

Scapes glandular, but also with woolly hairs, petals pandurate or obovate.

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Figure 2. Drosera lasiantha. A. Habit of plant in flower. B. Sepal. C. Petal. D. Ovary with styles. E. Style and stigma, enlarged. F. Leaf. G. Section of petiole. H. Stipule. Scales = 1 mm.

- Drosera nivea A. Lowrie & S. Carlquist, spec. nov. HOLOTYPE: AUS-TRALIA. Under and between low shrubs in pale yellow sand plains beside the Midlands Road, 37.3 km southeast of Carnamah, ca. 10 km SE of Coorow township, Western Australia, 22 September 1990, Allen Lowrie 278 (PERTH); Isotype: RSA.

Caulis ad 1.5 cm longus, ramosi 1-3, stipularum petiolarumque rudimentis cinerascentibus dense vestitus, hinc inde fibram radicalem demittens. Lamina elliptica, 1.4 mm longa, 1 mm lata, hemiglobosa. Petioli 4 mm longi, e basi 0.5 mm lati. Gemma ovoidea, 3.5 mm longa, 3 mm lata. Stipulae gemmae trilobatae, 4 mm longae, 1.5 mm latae, lobus centralis in 3 segmenti divisus, margine serrata, apex setosus; lobi lateralia serrati, 2 setae instructi. Inflorescentia racemiformis. Scapus unicus, ad 3 cm alti, sparse glandulosi. Flores 5-10. Pedicelli 1.5-2.0 mm longi, glandulosi, semierecti in fructibus, bracteolae 1.5 mm longae. Sepala ovata, 2 mm longi, 1.4 mm lata, integra, sed ad apicem serrata, e basi glandulosa. Petala alba, obovata, 4.5 mm longa, 3 mm lata. Ovarium ad anthesim subglobosum, 0.5 mm longum, 0.7 mm latum. Styli 4-5, rubri, patentia, 0.5 mm longi, 0.1 mm in diametro, acuminati. Capsula ignota.

Fibrous rooted perennial herb forming a compact convex rosette 1.3 cm in diameter. Stem to 1.5 cm long, covered with remains of the previous season's leaves and stipules, often with 3 rosettes crowded at the ends of a stem. Active insect trapping leaves about 20 in number. Lamina elliptic, 1.4 mm long, 1 mm wide, deeply cupped. Petiole 4 mm long, 0.5 mm wide near the base, tapering to 0.2 mm wide at the apex. Stipule bud ovoid, 4.0 mm long, 3.0 mm wide, setae included. Stipules trilobed, 4 mm long, 2.5 mm wide, the central lobe divided into three segments, each segment narrowing to setae; lateral lobes upper outer margins serrate, apex with two short setae, on the inner margin two setae are present, each exceeding the length of the central lobe. Inflorescence a raceme. Scape single, to 3 cm long, sparsely covered with glandular hairs. Flowers 5 to 10 in number. Pedicels 1.5-2.0 mm long, glandular, semierect in fruit, bracteoles 1.5 mm long. Sepals ovate, 2 mm long, 1.4 mm wide, margins entire, but apex irregularly serrate, surfaces covered with a few glandular hairs near the base. Petals white, obovate, 4.5 mm long, 3 mm wide. Ovary at anthesis subglobose, 0.5 mm long, 0.7 mm in diameter. Styles 4-5, red, spreading horizontally, 0.5 mm long, 0.1 mm in diameter. Stigmas white, 3.5 mm long, filiform, acuminate.

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Drosera nivea (Fig. 3) belongs to subgenus Rorella section Lamprolepis. Drosera citrina (see above) is considered the closest relative of D. nivea, but differs from it in the features presented in the key below.

Flowers white, scapes 5-10 flowered, pedicels 1.5-2.0 mm long. D. nivea

Drosera silvicola A. Lowrie & S. Carlquist, spec. nov. HOLOTYPE: AUS-TRALIA. In laterite gravel soils in open jarrah forest, 7 km S of North Bannister on the Albany Highway, Western Australia, 11 November 1991, Allen Lowrie 513 (PERTH); Isotype: RSA.

Herba perennis rosulata, rosula foliorum 3 cm in diametro. Caulis ad 3 cm longus, stipularum petiolorumque rudimentibus dense vestitus. Folia erecta vel semipatentia. Lamina anguste elliptica, 5.5 mm longa, 1 mm lata. Petioli 9 mm longi, e basi 0.8 mm lata, ad apicem 0.4 mm lata, canaliculata. Gemma ovoidea 8 mm longa, 4 mm in diametro, setae inclusae. Gemmae stipulae trilobatae, 8 mm longae, 7 mm latae, lobus centralis in 3 segmenti subdivisus, segmentus centralis serratus, apex bisetosus, segmenti lateralia serrati, bisetosae. Inflorescentia racemiformis. Scapus unicus, e basi manifeste curvatus, glandulosus. Flores ca. 20. Pedicelli 1.5 mm longi, in fructibus semierecti: bracteolae 1.5 mm longae glandulosae. Sepala ovata, 1.8 mm longa, 1.0-1.3 mm lata, ad apicem serrata, glandulosa. Petala rosea, e basi atrorosea, cuneata, 7 mm longa, 0.8 mm lata, ad apicem subdentata. Ovarium subglobosum, ad anthesim 0.5 mm longum, 0.8 mm in diametro. Styli 3, rubri, patentia, albohvalini, acuminati, 1.5 mm longi. Capsula ignota.

Perennial herb forming an open rosette of erect and semierect leaves, rosette to 3 cm in diameter. Stem to 3 cm long, covered with remnants of the previous season's leaves and stipules, prop roots below. Lamina narrowly elliptic, 5.5 mm long, 1 mm wide; petiole 9 mm long, 0.8 mm wide at base, 0.4 mm wide at apex, channeled on the abaxial surface along its length. Stipule bud ovoid, 8 mm long, 4 mm in diameter, setae included. Stipules trilobed, 8 mm long, the central lobe subdivided into three segments; the central segment serrate on the outer margins, the apex narrowing to three setae, the lateral segments serrate on the outer margins with the apex narrowing to two setae (lowermost on the inside margin a longer seta is present, exceeding the length of the central segment); lateral lobes serrate on the outer lower margins with the apex divided into two short setae; on the inner margin two setae are present, both



Figure 3. Drosera nivea. A. Habit of plant in flower. B. Sepal, C. Petal. D. Ovary with styles. E. Enlarged portion of style and stigma. F. Leaf. G. Section of petiole. H. Stipule. Scales = 1 mm.

almost equaling the length of the longest setae of the central lobe. Inflorescence a raceme, to 8 cm long. Scape single, notably curved at base, covered by short studlike glands increasing in density upwardly; flowers about 20 in number. Pedicels 1.5 mm long, semierect in fruit, bracteoles 2.5 mm long, glandular. Sepals ovate, 2.8 mm long, 1.0-1.3 mm wide, the apex serrate, margins and surface covered by short studlike glands. Petals pink, reddish at the base, cuneate, 7 mm long, 5 mm wide, apex irregularly dentate. Ovary subglobose, 0.5 mm long, 0.8 mm in diameter at anthesis. Styles 3, red, spreading horizontally, 0.5 mm long. Stigmas spreading horizontally, translucent-white, tapering toward the apex, 1.5 mm long. Capsule unknown.

Drosera silvicola (Fig. 4) is known only from the type locality but is common in this area within a two km radius. It belongs in subgenus Rorella, section Lamprolepis. The species considered closest to D. silvicola is D. barbigera Planchon; the two species may be differentiated according to the characters given in the couplet below.

- Scapes covered with long lanate terete stalked glands; corollas red or bright orange, black in throat; style and stigmas black.D. barbigera
- Drosera stelliflora A. Lowrie & S. Carlquist, spec. nov. HOLOTYPE: AUSTRALIA. In laterite soils, sometimes with a little silica sand, along creek line at the motorcross track, east end of North Jindong Road, south of Busselton, Western Australia, 24 November 1990, Allen Lowrie 204 (PERTH); Isotype: RSA.

Caulis ad 2 cm longus stipularum petiolorumque rudimentis dense vestitus, hinc inde fibram demittens, folia rosulata. Lamina elliptica, 2.5 mm longa, 1.3 mm lata. Petioli 10 mm lata, e basi 1 mm lata, ad apicem 0.5 mm lata. Gemma ovoidea, 6 mm longa, 4 mm in diametro. Stipulae gemmae trilobata, 6 mm longae, 6 mm latae; lobus centralis in 4 segmenti divisus, 2 centralia bisetosi, 2 lateralia trisetosi; lobi lateralia integra, apex bisetosus, margine trisetosus. Inflorescentia racemiformis. Scapi 1-4, subglabri. Flores ca. 40. Pedicelli 1.5 mm longi, semierecti in fructibus, bracteolae subulatae, 2 mm longae, glabrae. Sepala ovata, subcrenata, 1.2 mm longa, 0.6 mm lata, glabra. Petala alba, lanceolata, 2 mm longa, 0.6 mm lata. Ovarium globosum, ad anthesim 0.4 mm in diametro. Styli 3, patentia, 0.3 mm longi. Stigma clavato-falcata, 0.3 mm longa. Capsula ignota.

Fibrous rooted perennial herb forming a hemispherical rosette of horizontal and semierect leaves to 2.5 cm in diameter. Stem to 2.5 cm long, covered



Figure 4. Drosera silvicola. A. Habit of plant in flower. B. Sepal. C. Petal. D. Ovary with styles. E. Enlarged portion of style and stigma. F. Leaf. G. Section of petiole. H. Stipule. Scales = 1 mm.

with the remains of the previous season's leaves and stipules. Active insect trapping leaves about 20 in number, the older leaves reflexed. Lamina elliptic, 2.5 mm long, 1.3 mm wide. Petioles 10 mm long, 1 mm wide at the base, 0.5 mm wide at the apex. Stipule bud ovoid, 6 mm wide, 4 mm in diameter including setae. Stipules trilobed, 6 mm long, 6 mm wide; central lobe divided into four segments, the central pair each narrowing to two setae with the lateral pair narrowing to three setae; lateral lobes with outer margin entire, the apex with two short setae and three setae on the inner margin, the lowermost setae spurred near the base and extending 1 mm longer than the central lobe. Inflorescence a raceme, to 4 cm long. Scapes 1-4, almost glabrous, crowded (flowers 40 or more). Pedicels 1.5 mm long, semierect in fruit, bracteoles subulate, 2 mm long, glabrous. Sepals broadly ovate, margins a little irregular, 1.2 mm long. 0.9 mm wide, surface glabrous. Petals white, lanceolate, 2 mm long, 0.6 mm wide. Ovary globose, 0.4 mm in diameter at anthesis. Styles 3, spreading horizontally, curved, 0.3 mm long. Stigmas clavate-falcate, 0.3 mm long. Capsule unknown.

Drosera stelliflora (Fig. 5) belongs to subgenus Rorella, section Lamprolepis. It occurs in large colonies throughout the jarrah forests between Busselton and Margaret River, often in cleared areas. The closest relative of D. stelliflora is probably D. enodes Marchant & Lowrie; from that species, it differs in respects summarized in the couplet below.

Scapes 3-20 flo	wered; pedicels	4.5 mm long; sti	igmas obspathulat	te-falcate, 1.5
mm long.		•••••		D. enodes

Drosera bicolor A. Lowrie & S. Carlquist, *spec. nov.* HOLOTYPE: AUS-TRALIA. In deep white silica sand between low shrubs on heathland, on floodplain of the upper Phillips River, 2.3 km from the Hyden-Ravens- thorpe Road, Western Australia, 25 September 1990, *Allen Lowrie* (PERTH).

Bulbus parvus. Caulis parte hypogaea brevis, 6 cm longus, parte epigaea ad 11 cm longa, ferruginea. Folia basalia saepe hypogaea, lamina arcuata, 1.2 mm longa, 1.8 mm lata, petiolo 3.5-7.5 mm longo, 0.3 mm lato. Folia caulina ad anthesim solitaria, peltata, folia inferiora adpressa, petioli 1.0-1.5 mm longi, folia superiora patentia, petioli 3-7 mm longi. Lamina foliarum superiorum arcuata, 2 mm longum, 2.5 mm lata, lobi 3.5 mm longi. Inflorescentia terminalia, racemiformis. Flores 8-20. Pedicelli 4-7 mm longi. Sepala lanceolata, 3 mm longa, 1.2 mm lata, glandulosa et nigropunctata, margine serrata. Petala alba, e basi roseomaculata,



Figure 5. Drosera stelliflora. A. Habit of plant in flower. B. Sepal. C. Petal. D. Ovary with styles. E. Enlarged portion of style and stigma. F. Leaf. G. Section of petiole. H. Stipule. Scales = 1 mm.

cuneata, truncata, margine erosa, 6 mm longa, 4.2 mm lata. Ovarium ellipsoideum, ad anthesim 1.2 mm longum, 1 mm in diametro. Styli 3, 0.6 mm longi, e basi elongati, ad apicem in lobi obovati stigmati divisi. Capsula ignota.

Bulb small. Underground stem 6 cm long. Aboveground stem to 11 cm long (including inflorescence), rust colored. Basal leaves crowded, often completely covered with sand grains as in *Drosera salina* Marchant & Lowrie, lamina crescentic, 1.2 mm long, 1.8 mm wide, petioles 3.5-7.5 mm long, 0.3 mm wide. Cauline leaves of the erect stem solitary at anthesis, peltate, lower petioles appressed to the stem, 1.0-1.5 mm long, upper petioles spreading, semierect, 3-7 mm long, lamina of upper stem leaves crescentic, 2 mm long, 2.5 mm wide, with lobes at the angles 3.5 mm long. Inflorescence terminal, a onesided raceme, flowers 8-20. Pedicels glandular, 4-7 mm long. Sepals lanceolate, 3 mm long, 1.2 mm wide, margins serrate with the marginal tips glandular; surface glandular, black dotted. Petals white with a reddish spot near the base, cuneate, truncate, concave and erose, 6 mm long, 4.2 mm wide. Ovary ellipsoid, 1.2 mm long, 1 mm in diameter at anthesis. Styles 3, 0.6 mm long, straplike at the base and flared outward at the apex into obovate lobes, the group of lobes recurved to form a rosette of stigmatic tips.

Drosera bicolor (Fig. 6) is presently known only from the type locality, although it may be expected in other locations along the upper reaches of the Phillips River. The area along this river system has been extensively cleared for agriculture, and therefore this species may be threatened. This species belongs to subgenus *Ergalium* DC., section *Ergalium* Planchon. Differences from the closest species are summarized in the form of a key below.

Inflorescence 5-20 flowered, erect stem straight.

Petioles of cauline leaves all semierect, 12 mm long; petals white. D. peltata Thunberg (W. A. plants)

Petioles of the lower cauline leaves appressed to stem, 1.0-1.5 mm long, petioles of the upper cauline leaves semierect, 4-7 mm long; petals white with a reddish spot near the base.D. bicolor

Drosera macrophylla Lindley subsp. monantha A. Lowrie & S. Carlquist, subsp. nov. HOLOTYPE: AUSTRALIA. In loam soils that dry out to become hard in summer, near truck bay on the north side of the York-Merredin Highway near Eujinyn, ca. 5 km west of Bruce Rock, 11 August 1990, Allen Lowrie 100 (PERTH); Isotype: RSA.

Ab Drosera macrophylla Lindley subsp. macrophylla differt: Scapi uniflori (rarii biflori).



Figure 6. Drosera bicolor. A. Habit of plant in flower. B. Sepal. C. Petal. D. Ovary with styles. E. Styles and stigmas. F. Style and stigmas enlarged, dissected. G. Stigmas and style segments, enlarged. H. Lamina and adjacent petiole portion of cauline leaf. I. Lamina and adjacent petiole portion of basal leaf. Scales = 1 mm.

Tuberous herb. Underground stem to 15 cm long. Leaves all in a flat rosette, sessile. Lamina obovate, 4 cm long, 2 cm wide. Scapes 20-50, 4-8 cm long, single flowered, rarely two flowered, erect in fruit. Sepals ovate 4.5 mm long, 2.2 mm wide, united at bases, margins entire, slightly serrate near apex, outer surface covered by sessile glands. Petals white, obovate, apex truncate-crenate, 9 mm long, 4.5 mm wide. Ovary globose, 2 mm in diameter at anthesis. Styles three, 1.5 mm long, each divided into segments divided repeatedly into 1-4 filiform branches toward apices, together forming a dense rounded tuft; stigmas on the rounded tips of each of these branches.

Drosera macrophylla subsp. monantha (Fig. 7) is common in the Bruce Rock-Merredin region. At present it does not seem to be threatened.

Drosera whittakeri Planchon subsp. aberrans A. Lowrie & S. Carlquist, subsp. nov. HOLOTYPE: AUSTRALIA. In red loam soils in mallee scrub country west and east of Sherlock, South Australia, 19 July 1991, D.E. Murfet 1059 (PERTH); Isotype: RSA.

Ab Drosera whittakeri Planchon subsp. whittakeri differt: planta emittens adventitiis stoloninus producens tubera; laminis 15 mm longis.

Tuberous perennial, producing additional tubers by means of the long adventitious stolons, the stolons borne in the center of the basal rosette of leaves in nonflowering specimens or just below the rosette of leaves in flowering specimens, adventitious stolons prostrate on the soil surface for a short distance before growing down into the soil to produce a tuber deep enough to permit successful dormancy. Leaves all in a flat basal rosette. Lamina broadly obovate, 6.5 mm long, 7.5 mm wide. Petiole 6.5 mm long, 1.6 mm wide at the base, dilated to 4 mm wide at the lamina base. Scapes one to four, 8-14 mm tall, single flowered, prostrate in fruit. Sepals ovate, 5 mm long, 2.4 mm wide, margins entire, apex acute, serrate near the tip, outer surfaces covered with sessile glandular hairs. Petals white, 9 mm long, 7 mm wide, cuneate, apex truncate, serrate. Ovary obovoid, 1.7 mm long, 1.8 mm in diameter at anthesis. Styles 3, white, each repeatedly divided from near the base into two to three branched filiform segments; stigmas at the rounded tips of these segments.

Drosera whittakeri subsp. aberrans (Fig. 8) is distinguished by reproduction by means of stolons that give rise to tubers. This new subspecies is currently known throughout the mallee country east of Adelaide. It extends into Victoria, where it is common and known from the Grampians National Park S of Horsham; Gembrook E of Melbourne, Anglesea SW of Geelong; the Brisbane Ranges north of Geelong (preceding localities according to Robert Gassin, personal communication); and Skye near the Mornington Peninsula, southeast of Melbourne (Robert Gassin 5, 30 October 1990).



Figure 7. Drosera macrophylla subsp. monantha. A. Habit of plant in flower. B. Sepal. C. Petal. D. Style portion with stigmas. E. Lamina. F. Ovary with styles. Scales = 1 mm.



Figure 8. Drosera whittakeri subsp. aberrans. A. Habit of plant in flower. B. Sepal. C. Petal. D. Ovary with styles: E. Enlarged portion of style and stigmas. F. Leaf. G. Section of petiole. Scales = 1 mm.

LITERATURE CITED

- Lowrie, A. 1987. Carnivorous Plants of Australia, Vol. 1. University of Western Australia Press, Nedlands, Western Australia.
- Lowrie, A. 1989. Carnivorous Plants of Australia, Vol. 2. University of Western Australia Press, Nedlands, Western Australia.
- Lowrie, A. & S. Carlquist. 1990. A new species of tuberous Drosera from Western Australia. Phytologia 69:160-162.
- Lowrie, A. & N. Marchant. 1992. Four new Drosera taxa from Western Australia. Nuytsia (in press).
- Marchant, N. & A. Lowrie. 1992. New names and combinations in 34 taxa of Western Australian tuberous and pygmy *Drosera*. Kew Bulletin (in press).